4.1.8 Solar Energy Systems for Residential or Agricultural Use

Definition
Solar Energy System: A device or structural design feature, a substantial purpose of which is to provide daylight for interior lighting or provide for the collection, storage and distribution of solar energy for space heating or cooling, electricity generation, or water heating.
Site Plan Review Authority: Tyringham Planning Board

Regulations
1. Occupying no more than three acres; the total three acre area of ground-mounted solar structures as measured shall include the array, areas where the solar panels are installed, all appurtenant and accessory buildings, access roads, landscaping and visual screening elements and shall not include wetlands.

2. Uses Permitted:
(a) Roof-Mounted Solar Energy Systems
(b) Ground-Mounted Solar Energy Systems

3. Site Plan Review:
Roof mounted and Ground-mounted solar energy systems shall undergo Site Plan Review by the Planning Board prior to construction, installation or modification as provided in this section.

4. Building Permit
No ground-mounted or roof-mounted solar photovoltaic installation shall be constructed, installed or modified as provided in this section without first obtaining a building permit.

5. Site Plan Review Document Requirements
Pursuant to the Site Plan Review process, the project proponent shall provide the following documents, as deemed applicable by the Site Plan Review Authority:
(a) a sight plan showing property lines and physical features, including roads, for the project site;
(b) Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures;
(c) Blueprints or drawings of the solar energy system signed by a Professional Engineer licensed to practice in the Commonwealth of Massachusetts showing the proposed layout of the system, any potential shading from nearby structures, the distance between the proposed solar collector and all property lines and existing on-site buildings and structures, and the tallest finished height of the solar collector;
(d) One or three line electrical diagram detailing the solar photovoltaic installation, associated components, and electrical interconnection methods, with all Massachusetts Electric Code (527 CMR 12.00) compliant disconnects and overcurrent devices;
(e) Documentation of the major system components to be used, including the panels, mounting system, and inverter;
(f) Name, address, and contact information for proposed system installer;
(g) Name, address, phone number and signature of the project proponent, as well as all co-proponents or property owners, if any;
(h) The name, contact information and signature of any agents representing the project proponent;
(i) Locations of active farmland and prime farmland soils, wetlands, permanently protected open space, and Priority Habitat Areas.

6. The project proponent shall submit documentation of actual or prospective access and control of the project site sufficient to allow for construction and operation of the proposed solar energy system.

7. Setback and Height Requirements
The setbacks for ground-mounted solar photovoltaic installations, including appurtenant structures and parking areas, shall be at least 50 feet from any property boundary.
The height of a ground-mounted solar photovoltaic installation or any appurtenant structure shall comply with the requirements of the existing Tyringham Zoning Bylaws.

8. Drainage
The Site Plan shall show adequate measures to prevent pollution of surface or groundwater, to minimize erosion and sedimentation, to prevent changes in groundwater levels, and to prevent increased run-off and potential for flooding.
Drainage shall be designed so that run-off shall not be increased and that neighboring properties will not be adversely affected. A system of groundwater recharge shall be provided that does not degrade groundwater quality. Recharge shall be by storm water infiltration basins or a similar system covered with natural vegetation. Dry wells shall be used only where other methods are not feasible. All basins and wells shall be preceded by oil, grease and sediment traps to facilitate removal of contamination. Any and all recharge areas shall be permanently maintained in full working order by the owner.

9. The project proponent shall submit a plan for the operation and maintenance of the ground-mounted solar energy system, which shall include measures for maintaining safe access to the installation, storm water controls, as well as general procedures for operational maintenance of the installation.

10. Proof of liability insurance.

11. A public outreach plan, including a project development timeline, which indicates how the project proponent will meet the required Site Plan Review notification procedures and otherwise inform abutters and the community.

12. Utility Notification - No grid-intertie photovoltaic system shall be installed until evidence has been given to the Site Plan Review Authority that the owner has submitted notification to the utility company of the customer's intent to install an interconnected customer-owned generator. Off-grid systems are exempt from this requirement.

13. Lighting - Lighting of ground-mounted solar energy systems shall be consistent with local, state and federal law. Lighting of other parts of the installation, such as appurtenant structures, shall be limited to that required for safety and operational purposes, and shall be reasonably shielded from abutting properties. Where feasible, lighting of the solar energy system shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution.

14. Signage - Signs on ground mounted solar energy systems shall comply with the town sign bylaw. A sign consistent with the sign bylaw shall be required to identify the owner and provide a 24-hour emergency contact phone number. Solar energy systems shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the solar energy system.

15. Utility Connections - Reasonable efforts, as determined by the Site Plan Review Authority, shall be made to place all utility connections from the solar photovoltaic installation underground, depending on appropriate soil conditions, shape, and topography of the site and any requirements of the utility provider. Electrical transformers for utility interconnections may be above ground if required by the utility provider.

16. Emergency Services – The ground-mounted solar energy system owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to the local fire chief. The roof-mounted solar energy system shall be located in such a manner as to ensure emergency access to the roof, provide pathways to specific areas of the roof, provide for smoke ventilation opportunities and provide emergency egress from the roof.
(a) For buildings with pitched roofs, solar collectors shall be located in a manner that provides a minimum of one three-foot wide clear access pathway from the eave to the ridge on each roof slope where solar energy systems are located as well as one three-foot smoke ventilation buffer along the ridge.
(b) Rooftops that are flat shall have a minimum three-foot wide clear perimeter between a solar energy system and the roofline, as well as a three-foot wide clear perimeter around roof-mounted equipment such as HVAC units.
(c) To the extent practicable, the access pathway shall be located at a structurally strong location on the building (such as a bearing wall).
Upon request the owner or operator shall cooperate with local emergency services in developing an emergency response plan. All means of shutting down the solar energy system shall be clearly marked. The owner or operator shall identify a responsible person for public inquiries throughout the life of the installation.

17. Safety - No roof-mounted solar energy system shall be located in a manner that would cause the shedding of ice or snow from the roof into a porch, stairwell or pedestrian travel area.

18. Land Clearing, Soil Erosion and Habitat Impacts - Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of a solar energy system or otherwise prescribed by applicable laws, regulations, and bylaws.

19. Monitoring and Maintenance - The ground-mounted solar energy system owner or operator shall maintain the facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, and integrity of security measures. Site access shall be maintained to a level acceptable to the local Fire Chief, Emergency Management Director, and Emergency Medical Services. The owner or operator shall be responsible for the cost of maintaining the solar energy system and any access road(s), unless accepted as a public way.

20. Modifications - All material modifications to a ground-mounted solar energy system made after issuance of the required building permit shall require approval by the Site Plan Review Authority.

21. Abandonment or Decommissioning Removal Requirements - Any ground-mounted solar energy system which has reached the end of its useful life or has been abandoned shall be removed. The owner or operator shall physically remove the installation no more than 150 days after the date of discontinued operations. The owner or operator shall notify the Site Plan Review Authority by certified mail of the proposed date of discontinued operations and plans for removal. Decommissioning shall consist of:

(a) Physical removal of all solar energy systems, structures, equipment, security barriers and transmission lines from the site.
(b) Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.
(c) Stabilization or re-vegetation of the site as necessary to minimize erosion. The Site Plan Review Authority may allow the owner or operator to leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation.

22. Abandonment - absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, the ground-mounted solar energy system shall be considered abandoned when it fails to operate for more than one year without the written consent of the Site Plan Review Authority. If the owner or operator of the solar energy system fails to remove the installation in accordance with the requirements of this section within 150 days of abandonment or the proposed date of decommissioning, the town retains the right, after the receipt of an appropriate court order, to enter and remove an abandoned, hazardous, or decommissioned ground-mounted solar energy system with all expenses incurred to be the responsibility of the owner and/or operator. As a condition of Site Plan approval, the applicant and landowner shall agree to allow entry to remove an abandoned or decommissioned installation.